

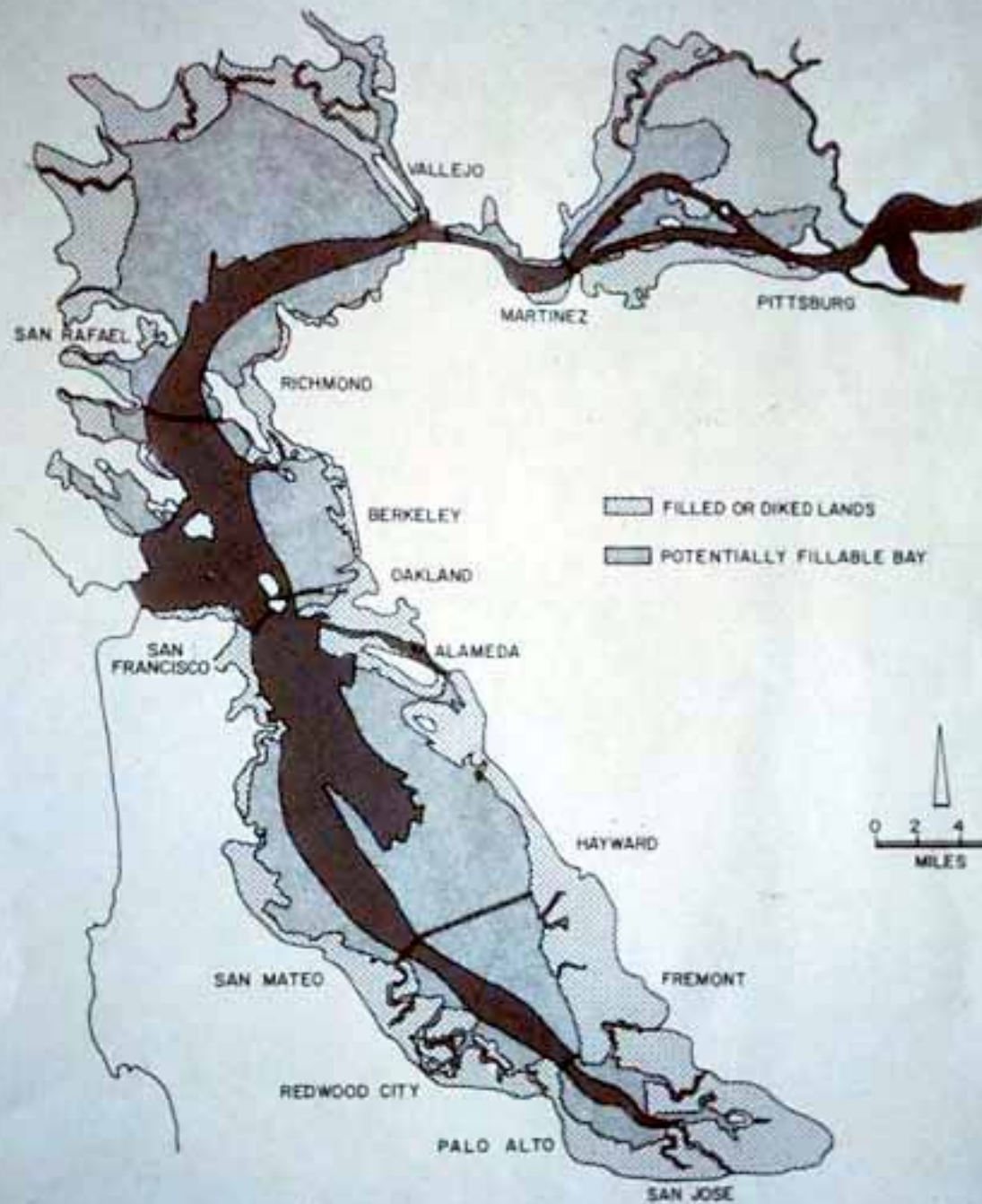
Responding to Rising Tides: San Francisco Bay



Steve Goldbeck
Deputy Director
San Francisco Bay Conservation
and Development Commission







San Francisco Bay Plan

San Francisco Bay Conservation
and
Development Commission

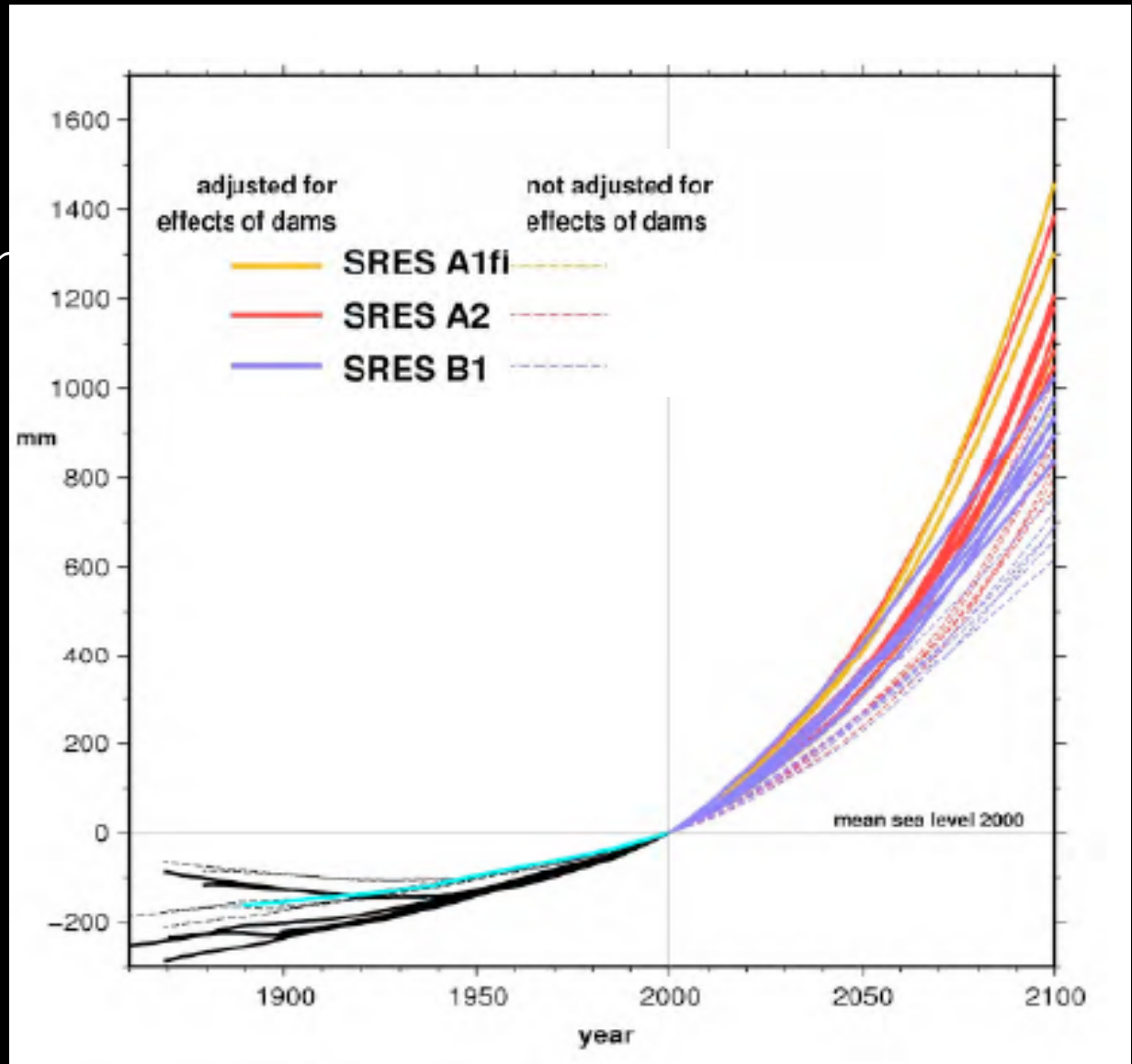




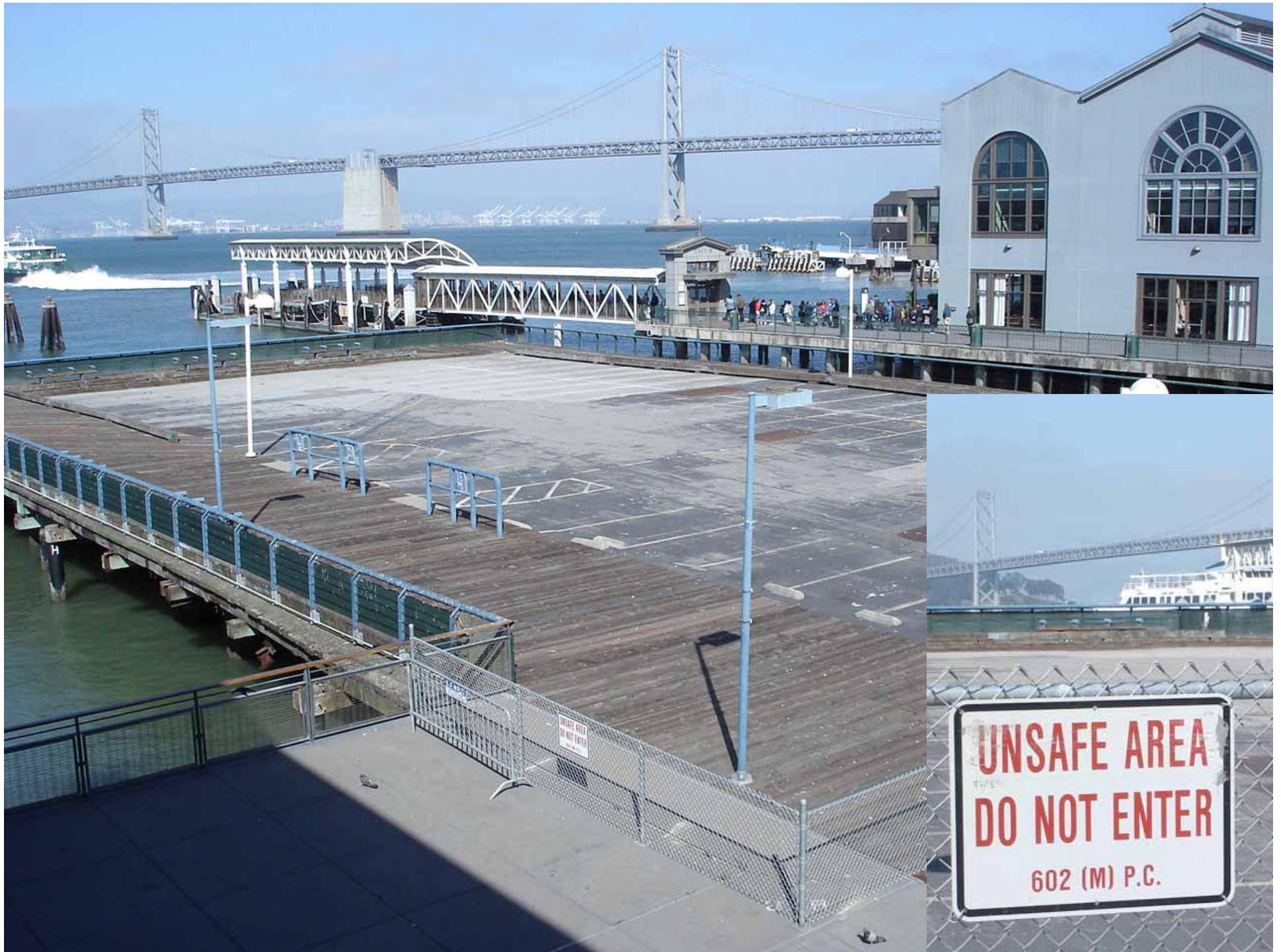
Projected Sea Level Rise

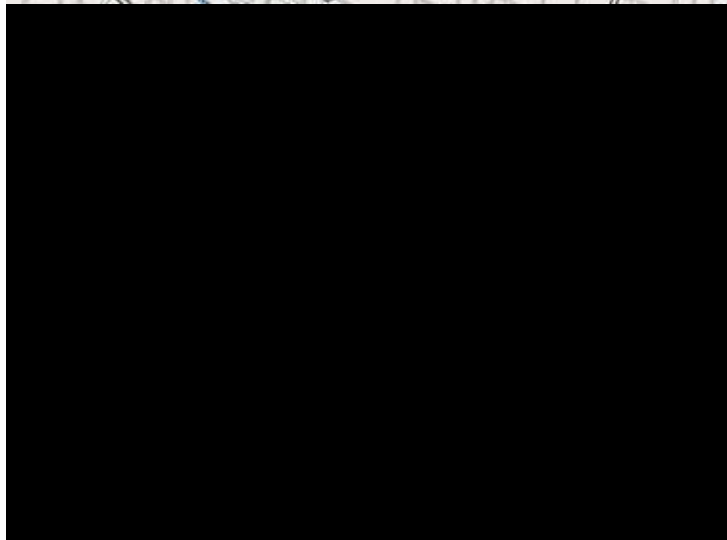
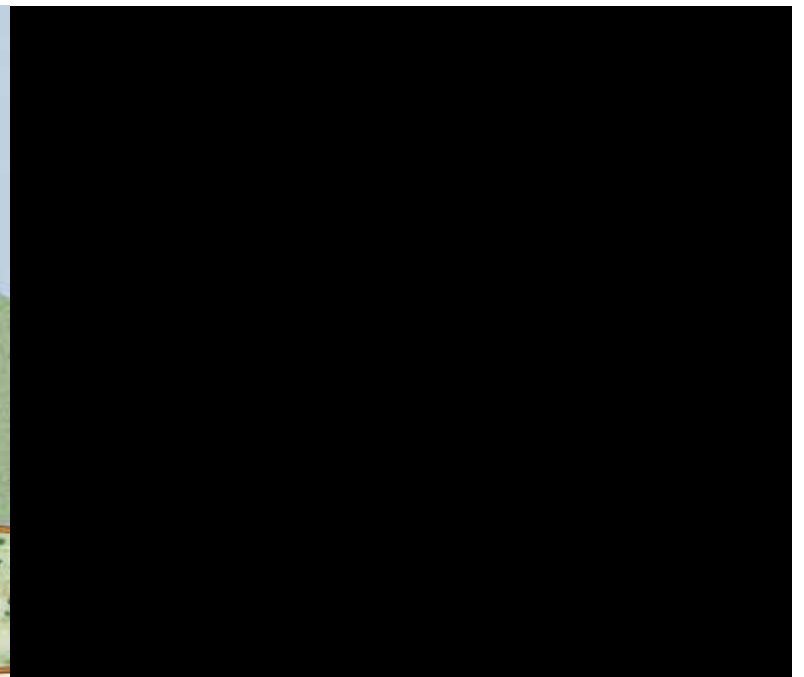
Three Emissions Scenarios

- A1fi – High
- A2 – Medium High
- B1 – Low

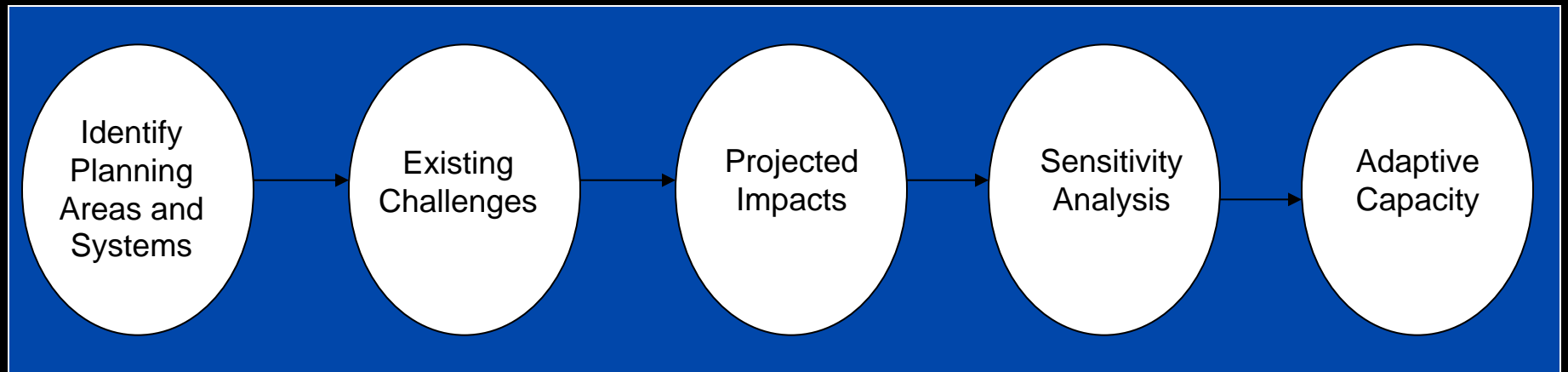


Source: California Climate Action Team Report 2009





Vulnerability Analysis



Scenarios SLR

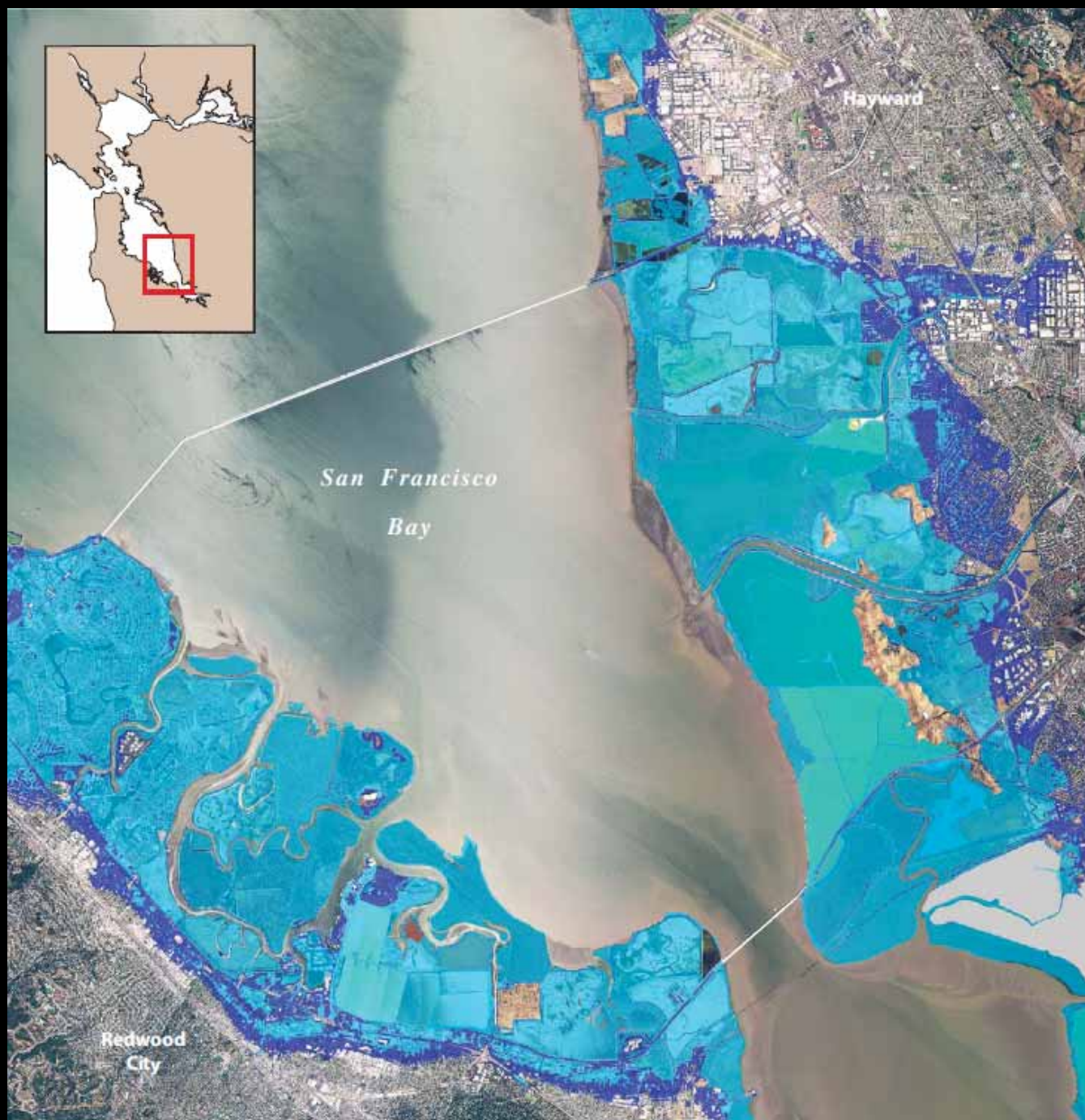
- 16 inches (40 cm) of sea level rise at 50 years
- 55 inches (140 cm) at 100 years
- Prepared by USGS (Knowles, 2008)

Potential Inundation

- About 180,000 acres (281 square miles) of shoreline vulnerable to flooding with 16 inches of sea level rise
- Approximately 213,000 acres (332 square miles) vulnerable at 55 inches



South Bay Central



16" SLR

55" SLR

Residential Inundation

- About 66,000 acres (103 square miles) of shoreline vulnerable to flooding with 16 inches of sea level rise
- Approximately 82,000 acres (128 square miles) vulnerable at 55 inches

Consequences

- Approximately 270,000 residents vulnerable to flooding
- Approximately 81 schools
- 11 fire stations
- 9 police stations
- 42 healthcare facilities


San Francisco International Airport

Fifty-five Inch Sea Level Rise



San Francisco International Airport



Sixteen Inch and
Fifty-five Inch Sea Level
Rise

 Sixteen Inch Sea Level Rise
and
 Fifty-five Inch Sea Level Rise



Oakland International Airport

Sixteen Inch and
Fifty-five Inch Sea Level Rise

 Sixteen Inch Sea Level Rise
and
 Fifty-five Inch Sea Level Rise



Silicon Valley

Sixteen Inch and
Fifty-five Inch Sea Level Rise

 Sixteen Inch Sea Level Rise
and
 Fifty-five Inch Sea Level Rise

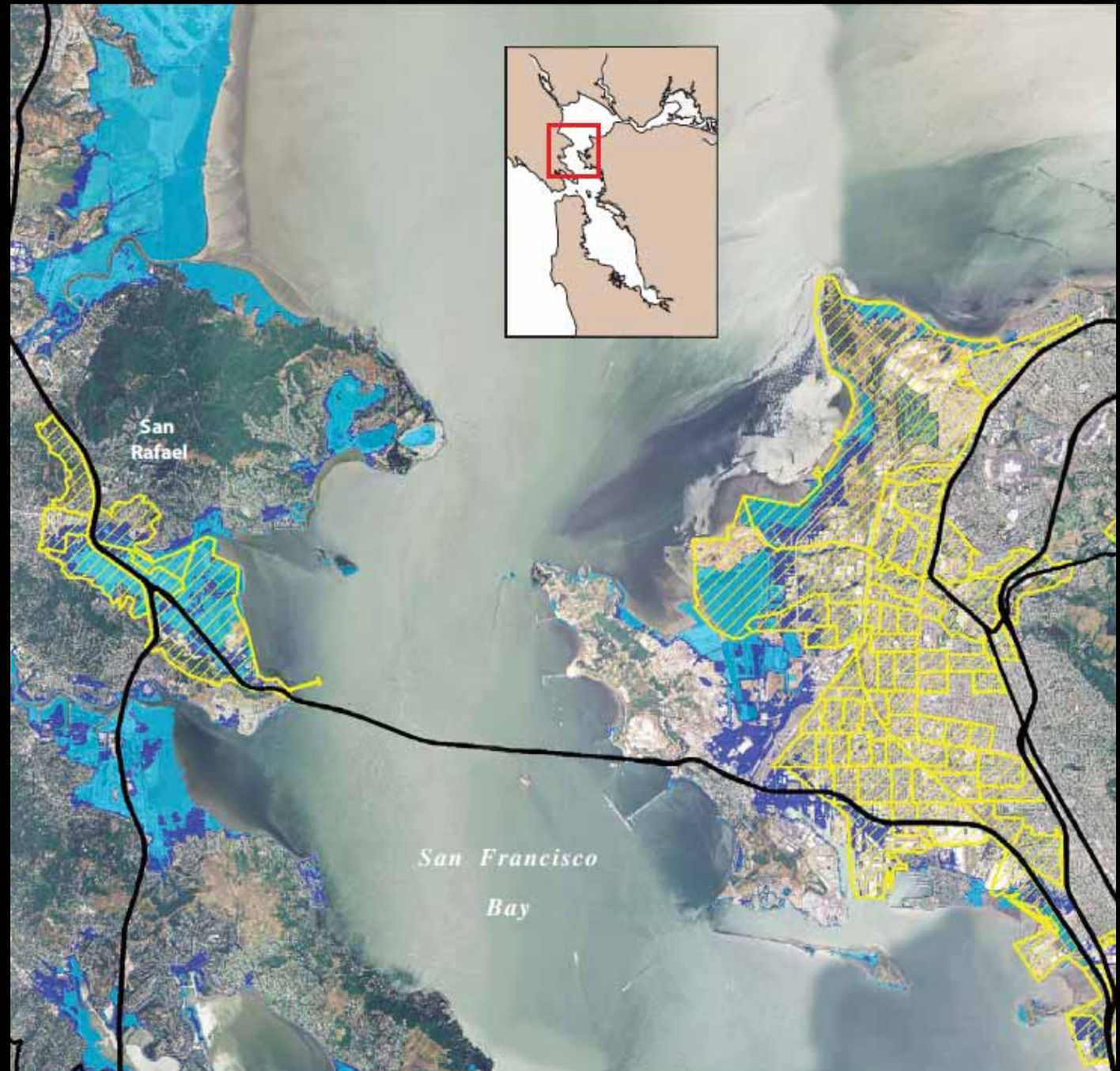
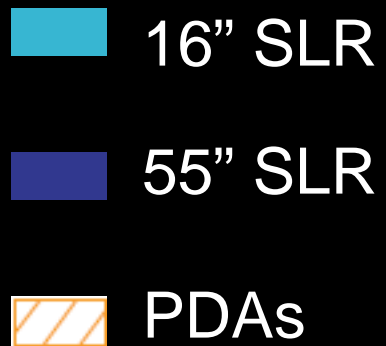


Costs

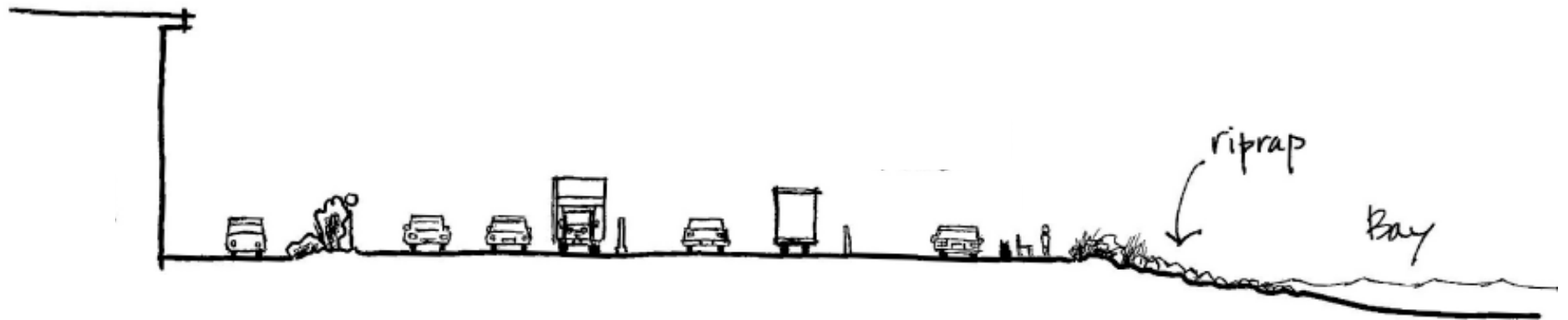
- \$62 Billion replacement value SF Bay Area
- \$32 Billion for the rest of Ca shoreline



Central Bay
North
Low-income
Communities



Major Highways Adjacent to the Bay



Transportation Vulnerability

- Approximately 99 to 106 miles of roadways are vulnerable to flooding
- Approximately 70 to 105 miles of rail are vulnerable at 55 inches (140 cm).

Wastewater Treatment

Approximately 22 treatment plants are vulnerable to flooding at 55 inches.

1849

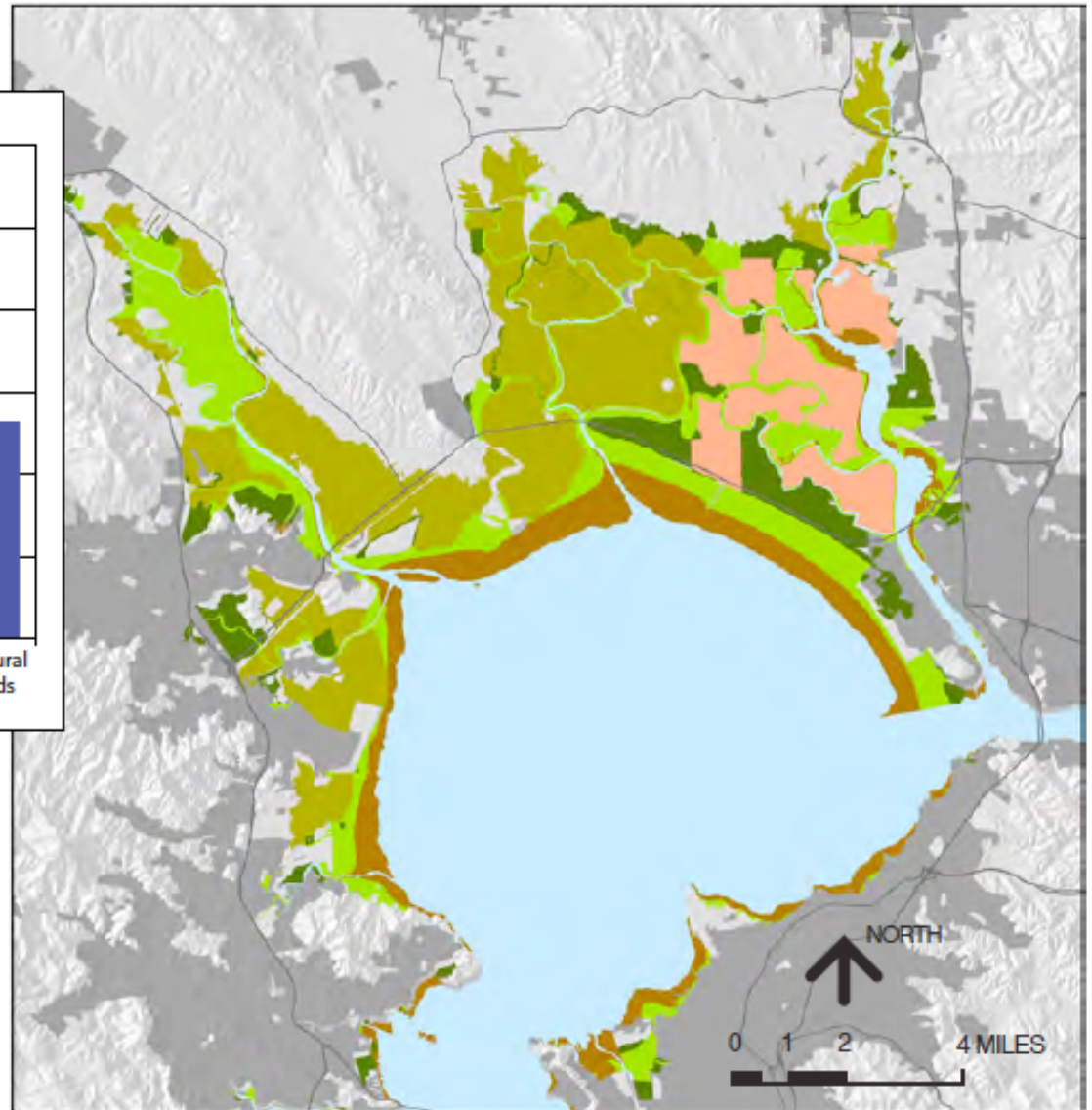
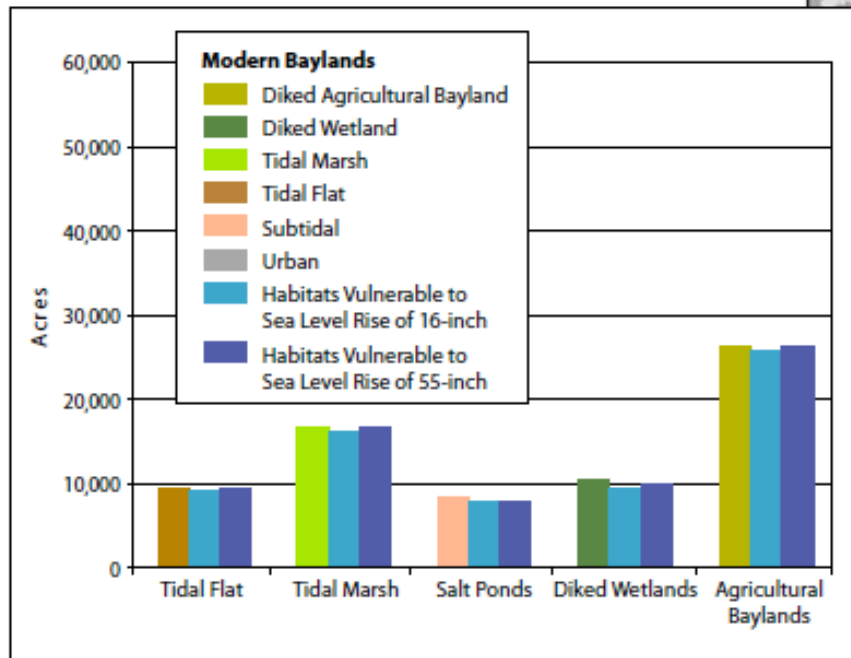


2100






North Bay Marsh Habitats Vulnerable to Sea Level Rise




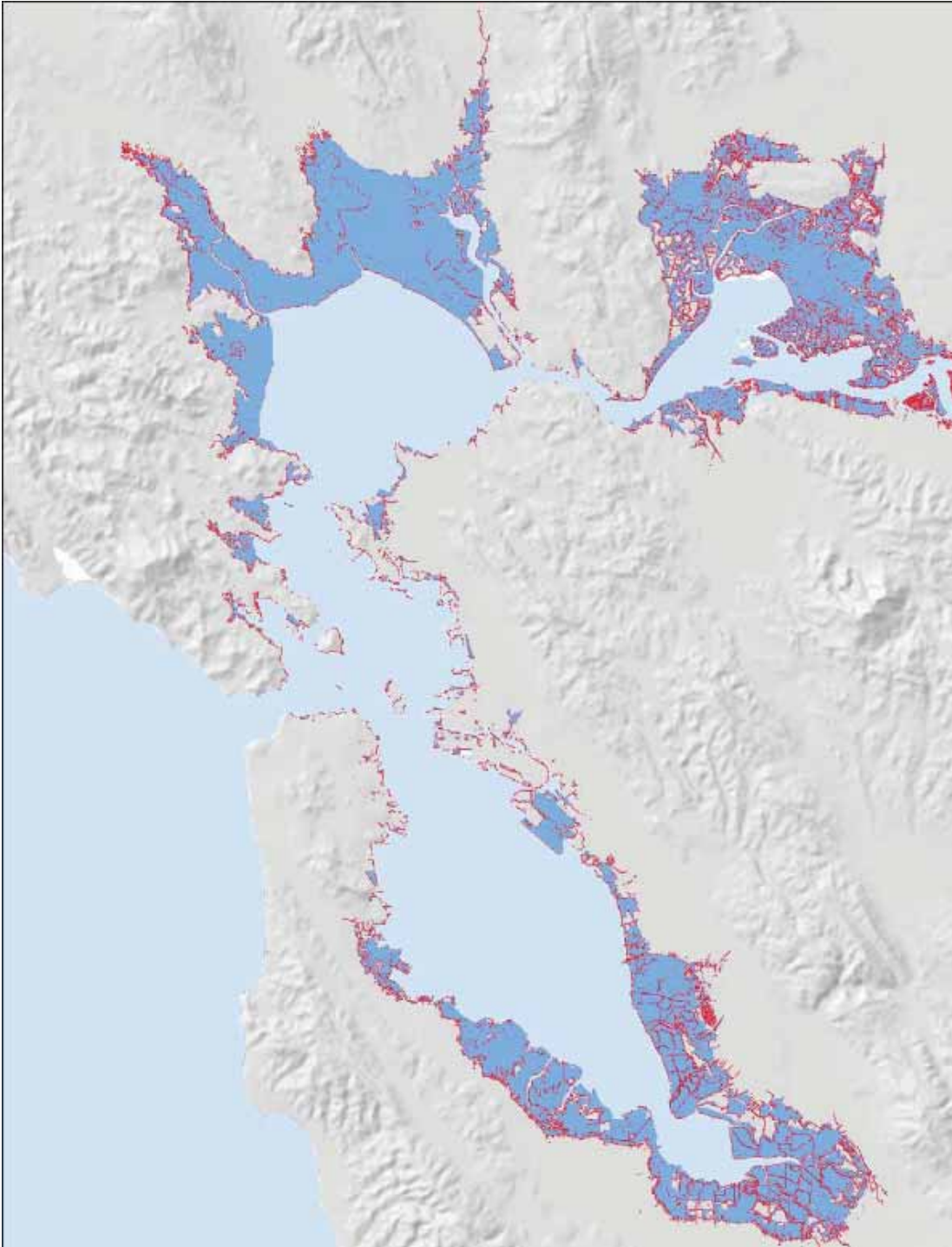
Source: Baylands (EcoAtlas 2009), Hillshade (USGS NED)



Today's Flood is Tomorrow's High Tide

 Area subject
to high tide
with 16 inches
of sea level
rise

 Current 100-
year flood
plain



San Francisco Bay Plan

San Francisco Bay Conservation
and
Development Commission

Joint Policy Committee

- Association of Bay Area Governments
- Bay Area Air Quality Management District
- BCDC
- Metropolitan Transportation Commission

Wetlands & Flood Control

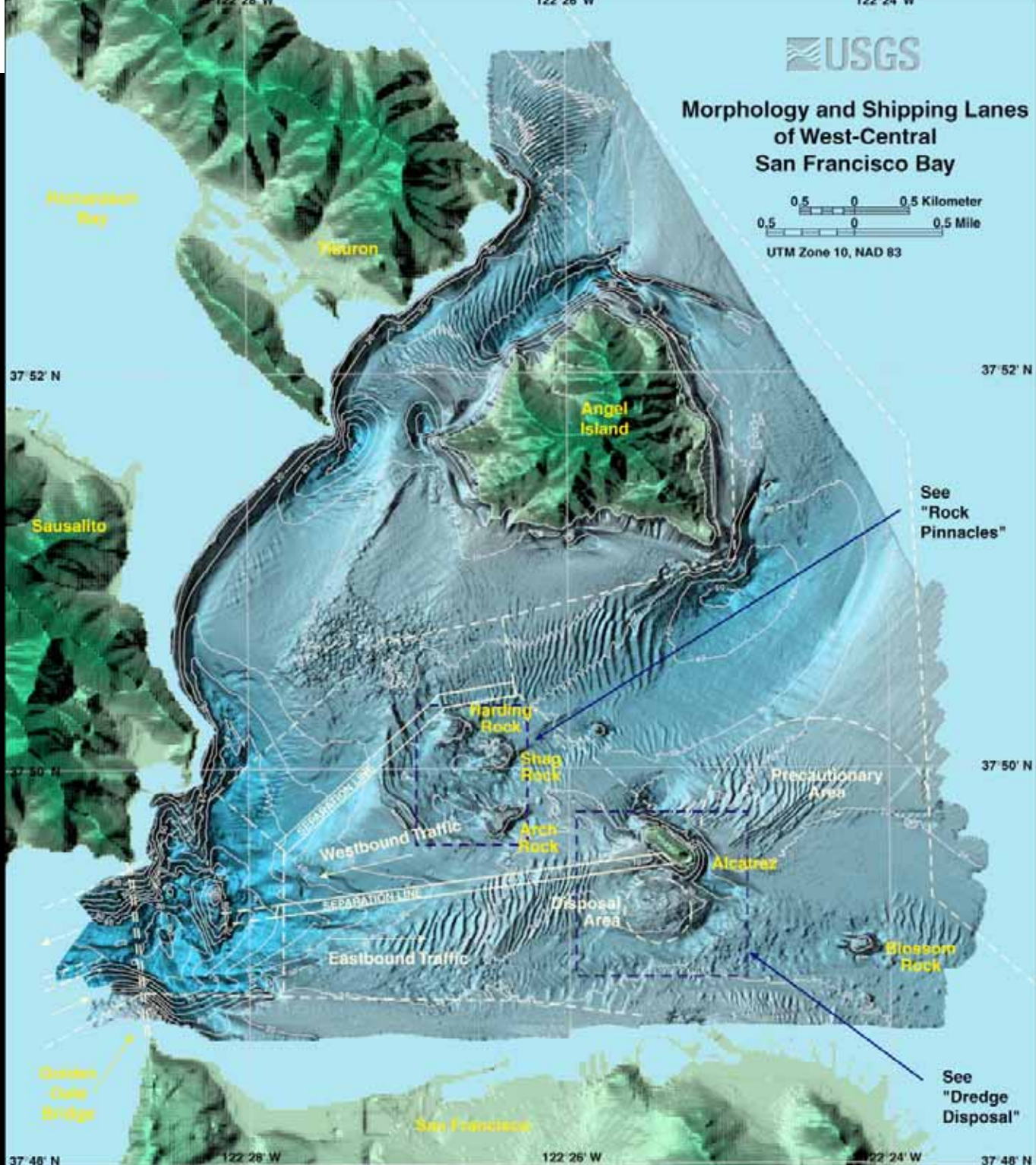


Climate Ready Estuaries Pilot

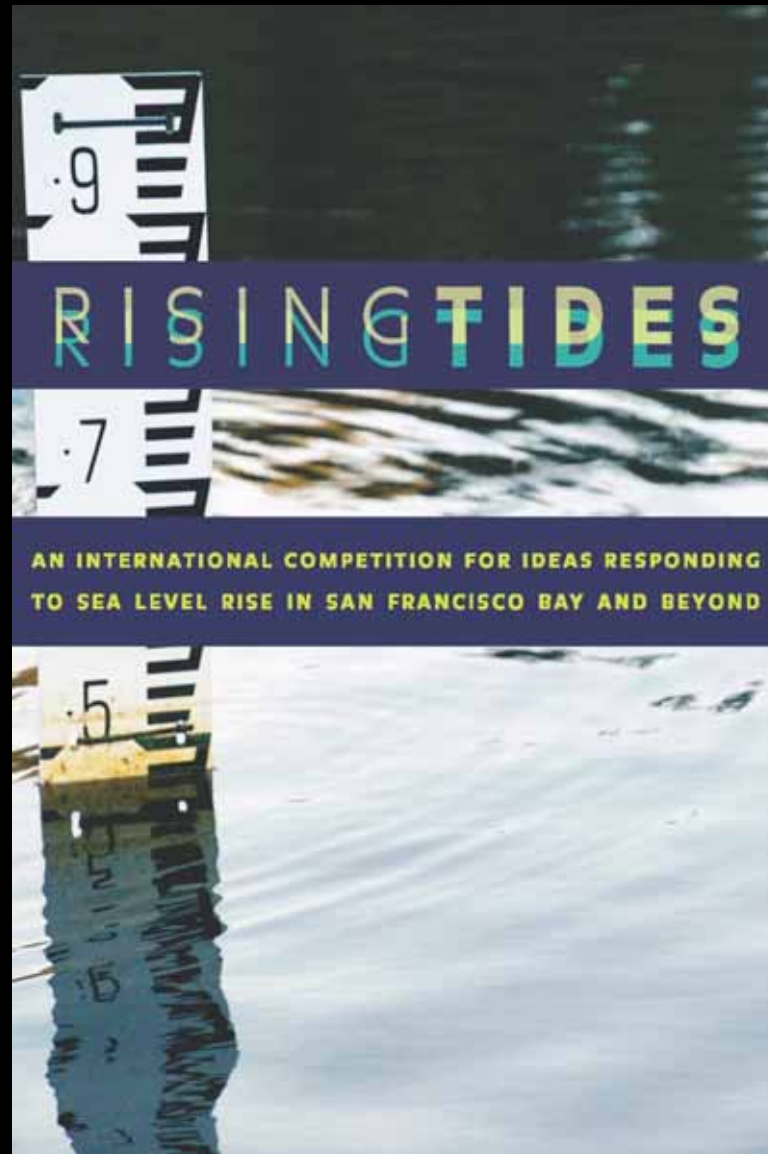




Morphology and Shipping Lanes of West-Central San Francisco Bay



Design Competition



The Dutch



Local Government Assistance

- Workshops
- Provide Tools
- NOAA Fellow

Needs

- LIDAR & Bathymetry
- Research on data gaps
- Regional SLR projections
- Climate adaptation center

